FAA AVIATION NEWS

FEBRUARY 1973

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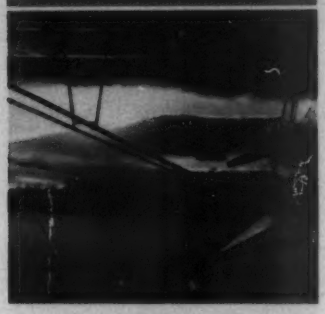

COVER:
Ski-planing in Alaska.

Photo by
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FAA AVIATION NEWS

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Claude S. Brinegar, *Secretary of Transportation*
John H. Shaffer, *Administrator, FAA*
James R. Greenwood, *Director of Public Affairs*

David Gelfan, *Editor*
Gernot Rasmussen, *Art Director* Ruth Taksel, *Assistant Editor*

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SKI BUNNY

First time on skis has its own thrills

At altitude, flying with skis seems just about the same as flying with wheels. You have to remember that you will be giving up about five to ten percent of your normal airspeed and range, and not over-extend your flight. Your stall speed may be a little higher, in which case you will want to keep your turns a bit more shallow, especially in turbulent air. Otherwise the airplane handles the same as ever.

It is on the surface that the ski-equipped airplane behaves with an entirely different personality. From the moment you fire up the engine you are likely to discover some problems you never dreamed about. For example, the airplane may not want to move—even under full power. You may be frozen solidly to the ice or snow crust.

This happens quite frequently even when the temperature has not been anywhere near the thawing point. The friction of the ski moving over ice or snow produces enough slush to anchor your craft in place after standing only a few minutes. You want to be cautious about grabbing the tail section and wrenching the skis free. You can exert enough leverage in this manner to break the skis or even the axle. Try rocking the tail gently to loosen the tail or nose ski, and then cautiously rock the wings to work loose one main ski at a time. If gentle persuasion fails, get a spade or an icepick and carefully chip a trench around the skis.

Metal skis form the most stubborn bonds with ice; wood or fiberglas cause less trouble. Spraying beforehand with silicon or other freezing preventives helps; anti-freeze tape is also available, and lasts longer. The cheapest preventive, for those who remember to use it, is a pair of 2 x 4 wooden blocks placed under each ski when you tie down.

Tying down an airplane equipped with skis is always a must, even though it is sometimes quite a chore; suitable tie-down fastenings are rarely available in the snow country. You may have to improvise weights, such as pails of water that will freeze into anchors for the wings; make use of a tree or bush to tie down the tail. In mountainous or far north country most frequently inhabited by ski-equipped airplanes the weather is very changeable. You may have landed in a dead calm, but a blizzard could spring up in the night and blow your little bird into the nearest canyon unless you secured it well. It helps to find some partial shelter against the wind—the edge of a woods, the lee of a hill, or the rear of a building. If you have ever preflighted in a subzero gale, you know the meaning of windchill.

Apart from preventing the airplane from being blown away in the night, secure tie-downs are necessary to help you control the airplane when you start the engine—unless you are lucky enough to have several pairs of hands holding the wings. If the weather is really cold, and you neglected to drain the oil after landing so that you could preheat it this morning, your battery may not be strong enough to turn the prop, and you are likely to find yourself learning about handpropping an airplane the hard way. If you find yourself doing the job alone, you might want to remember the old bush pilot's trick of loading the engine with fuel and pulling the prop through a few times with the switch off, then cutting off the fuel before turning on the switch and propping. This assures you that the aircraft will not have fuel enough to break loose and start flying on its own, once the engine catches.

Your run-up has to be done either while still tied down, or while taxiing—the latter procedure is safe enough unless you have to contend with icy taxiways. You taxi slower than when on wheels, as you have no brakes, and you keep the airplane moving and under control: skiplanes are easily subject to weather-vaning on slick surfaces.

If there has been fresh snow in the night, or the wind has piled up drifts across the area you landed on, you might want to taxi over the entire length of the strip once or twice, to feel out the surface and locate any hard obstacles, including solidly frozen snow mounds. If the snow is deep or sticky you are going to need a lot more runway than usual, and it helps to find this out ahead of time. If you have a windswept glare ice condition to reckon with, directional control may be your big problem, and you will want to make sure about wind direction before you take off. Regardless of how easily you may have landed only a few hours before, wind and weather conditions in ski country may have changed enough in this space of time to make a takeoff unsafe or even impossible.

Landings with skis can be surprisingly simple, or surprisingly difficult, depending again on surface conditions. Going down on an unfamiliar field without local weather information can be very bad news. A frozen lake surface with a frosting of snow can look extremely inviting, when in fact it may be made up of very rough ice concealed by a thin topping of white stuff. Or, the snow may be a yard deep and have the consistency of wet cement. It saves no end of wear and tear of pilots and airplanes to talk over possible landing areas in the back country with local pilots at a "gateway" airport before heading for the woods.

Landing on snow often presents some of the same problems as landing on still water. It is very difficult to judge distances, and very easy to become disoriented. Some pilots like to "drag" unfamiliar snow terrain before landing—they make a low pass over the intended strip and will sometimes even touch the skis lightly to the surface to test it. Any disruption of the even white surface will have the advantage of improving visibility during the actual landing.

If the surface appears to have a heavy or crusted layer of snow, a soft field landing technique is in order. Power is used to hold the nose up and reduce ground speed as far as possible at touch-down. A solid ice surface calls for a landing directly into the wind, also at the lowest possible approach speed. Although skis have some resiliency, they provide nothing like the cushioning effect of pneumatic tires, and a slow speed helps to minimize the landing impact.

Nothing is more alluring to the adventuresome eye—or more deceptive—than a snow-covered clearing in a wild, remote area. Only experience can teach you how to judge it accurately. Until you have logged a few hundred hours on skis, follow the example of most ski bunnies: stick to packed and well-marked terrain. ■

Coming in Under a Cloud

How many pilots are surprised by weather conditions at their terminal airports?

Among the hundreds of FAA flight assists to pilots in trouble that are reported every month, the incident involving a VFR flyer caught on top of clouds recurs with remarkable frequency. Some have a happy ending with a safe landing, others do not. The usual reaction is, *How could he be so dumb?*—or words to that effect, implying a plain lack of common sense. A better explanation may be that a great many pilots do not understand weather reports, or use them properly.

Some airmen evidently are in the habit of confusing *Aviation Weather Reports* (often called "sequence" reports) with *Terminal Forecasts* and *Area Forecasts*. A forecast is just that—a prediction of what the weather is likely to be at some point in the future. A sequence weather report, on the other hand, gives you the current weather at a given point. Sequence reports are issued by the weather observer every hour on the hour (unless an unexpected or significant change causes the issuance of a special report). In addition to cloud information the sequence weather report gives you visibility, barometric pressure, temperature, dewpoint, wind, altimeter setting, and sometimes pilot reports of weather conditions enroute not visible from the ground.

While short range weather forecasts are fairly accurate, no pilot should stake his life on a prediction of what is expected to happen at a given airport in the future. He must be alert to the fact that a forecast ceiling of 3,000 feet could easily descend below 1,000 feet in the three or four hours before he arrives at his destination; and to keep from being unpleasantly surprised he should monitor the scheduled weather broadcasts en route. Sequence reports are broadcast hourly on the quarter hour on the VOR frequency. If you miss a transmission, you can radio the nearest flight service station for the report.

On the other hand, no pilot should assume that the existing weather at a terminal, as given in the sequence report, will hold until he arrives. Clouds are in motion, and the cloud picture over an airport could change within a matter of minutes, affecting the legality of operations as well as safety.

Most pilots know that a ceiling by definition begins when more than .5 of the sky is covered by clouds. What is described in weather reports as "scattered" clouds means that at least half of the sky is visible *as viewed from the ground*. This does not necessarily mean, as some persons imagine, that small puffs of clouds are scattered around the sky. On the contrary, a scattered condition is the same terminology that would be used if a

single large cloud covering half of the sky were present. Five minutes later that cloud *could* be covering most of the sky, and you would have a more critical ceiling to reckon with.

Ceilings are either described as broken (◍), when .5 to .9 of the sky is covered, or as overcast (⊕), when more than .9 is covered. Obviously two or more ceilings can exist over any given point at the same time, at various altitudes, and these would be reported in a sequence report. For example, consider this portion of the following sequence report:

TXK 30◍ E50◍ 100⊕

If spoken the report would be, *"Texarkana, three thousand scattered, estimated five thousand broken, ten thousand overcast."* For airmen the ceiling at Texarkana at this moment is estimated at 5,000 feet, as indicated by the letter E. There are several methods for determining a ceiling, each with its letter code: A—reported by an aircraft in flight; B—by releasing a weather balloon with a known ascension rate and timing it until it enters the clouds; E—estimated by a trained observer; and M—measured by a ceilometer or light beam.

Pilots must realize that however accurate the estimated or measured ceiling may be at the time it is reported, in turbulent air the ceiling altitudes can change very rapidly. It is an easy, but dangerous, trick of the mind to visualize the reported clouds as fixed or stratified in place, when in fact a great deal of vertical and horizontal movement may be going on. It may help to think of the sequence weather report as a split-second still photo taken of a dynamic weather phenomenon.

Furthermore, some pilots are prone to interpret a report of this kind to mean that clear areas of blue sky exist between the reported cloud layers, and that by descending say to 4,000 feet on approaching Texarkana they would have an unobstructed view ahead. This is by no means necessarily true. The sequence report says nothing about the height of tops of the cloud layers.

The weather observer on the ground has no way of knowing whether there is a layer of cloudless sky between 3,000 feet and 5,000 feet, or whether there is simply a progressive buildup of clouds through these altitudes, as well as between the broken ceiling at 5,000 feet and the reported overcast layer at 10,000 feet. The upper extension of the overcast is not indicated and could easily be several thousand feet higher. A pilot intending to fly between layers and remain VFR may find himself trapped in a solid overcast condition.

Remember that sequence reports are spot reports. Weather observations are available from a limited number of airports, where professional observers are on duty, and it is simply inaccurate to assume that the exact conditions reported over Martinsburg, W. Va. will also prevail at Frederick, Md., 30 miles away.

Nevertheless, sequence reports can be used by understanding pilots to gain a quite reliable picture of the weather over a given locality, if they are read in their entirety, and if successive reports are studied before a decision is made about landing. For example, consider the following sequence:

DCA 212100Z E25 80 10 112/86/71/-1514/987/ SWLG CU ALQDS

If you are heading for an airport in the nation's capital area on this 21st day of the month, expecting to arrive about 5:00 p.m., this report does not sound too discouraging—in the early portion of the sequence. At 4:00 p.m. VFR conditions prevailed, 2,500 foot ceiling, 10 miles visibility, no problem. Wait a minute—what about those abbreviated words at the end of the sequence . . . "Swelling cumulus clouds in all quadrants." That bears watching.

The next DCA sequence reads:

DCA S212130Z E20 60 7 084/86/-71/1610/979/ TCU ALQDS FEW CB

The first thing you notice about this sequence is that it is a Special, as indicated by the leadoff S, which means something big, weatherwise, has taken place, perhaps the drop in ceilings (the urgency of this sequence is also signalled by the fact that it is datelined only half an hour after the preceding report).

All right, let's see what the situation is now. The ceiling has moved down to 2,000 feet, all right, visibility down to seven miles—still VFR conditions for your proposed landing. What else . . . ? Barometric pressure has dropped off a new points, no great worry yet. But look at the final remarks: the "swelling cumulus" clouds of the earlier report are now described as "towering cumulus in all quadrants," and some cumulnimbus clouds have formed—rain.

You can now do your own weather forecasting. The chances are very good that by the time you arrive in the area, a half hour hence, it will probably be raining cats and dogs, with the ceiling close to the ground and the visibility well restricted. To the safety-minded pilot, all of these sequence symbols now add up to one word:

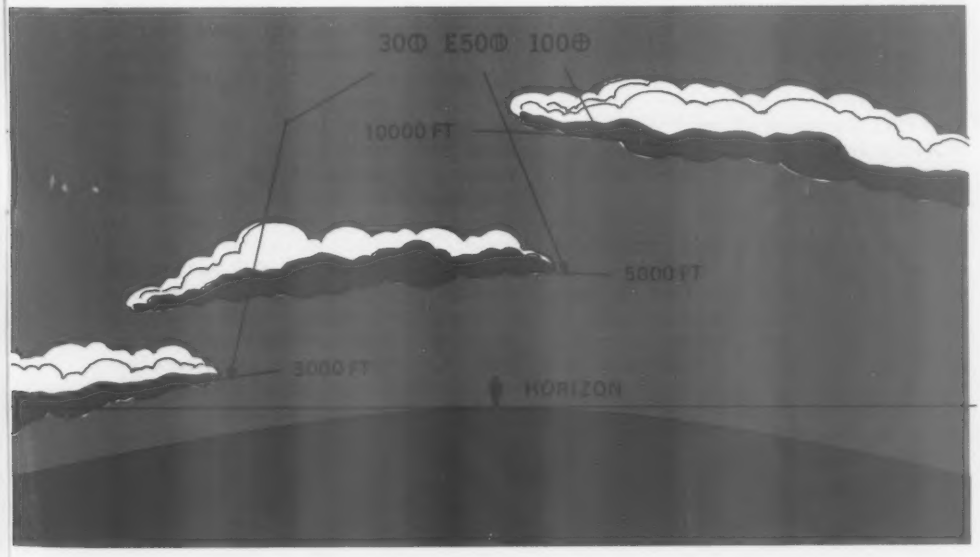
Divert.

Or, if you are still on the ground, stay put.

Getting locked out of an airport by clouds, one of the common fates that befall unwary pilots, can be avoided at least nine times out of ten by studying and interpreting weather reports intelligently. In our carefully monitored airspace clouds do not suddenly appear. Their presence is observed and reported for those who care to know, which should include everyone.

SCHOOL LIBRARY

An excellent discussion of weather reports, symbols and interpretation is given in the recently revised "Pilot's Handbook of Aeronautical Knowledge," AC 61-23A. Send $4 to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.



When the clouds are in layers the ground-based weather observer may not be able to determine the actual extent of the higher cloud layers, so he uses the summation principle and reports the amount of sky covered by the combination of lower and higher clouds. Remember though—if the clouds hide more than half the sky from the observer they will also hide more than half the surface from the pilot flying over them.

New Rules for Airmen Certification

After many months of consideration and a review of some 1600 public comments, FAA on January 23, 1973 completed rulemaking action on a number of important changes to Part 61 of the Federal Aviation Regulations, affecting the certification of all pilots and flight instructors except airline transport pilots. The new rule goes into force on November 1, 1973; however, for one year after that date persons applying for pilot certificates or ratings may choose to seek certification under either the existing rules or the revised rules.

Of chief concern to most pilots has been the much discussed "biennial review" proposals, as recommended in the 1971 study on general aviation safety conducted by the Department of Transportation. The new rule will require a flight review every 24 months for all pilots (given by an appropriately certificated flight instructor or other person designated by the Administrator), unless a pilot has satisfactorily completed a pilot proficiency check conducted by FAA, an approved pilot check airman, or by the United States Armed Forces.

The term "flight review" is defined as "a review of those maneuvers and procedures which in the discretion of the person giving the review are necessary for the pilot to demonstrate that he can safely exercise the privileges of his pilot certificate."

In view of the fact that many serious accidents are caused by poor judgment, alcohol and inadvertent flight into bad weather, it is obvious that the biennial flight review will not solve all safety problems. Nevertheless, FAA believes it will enhance air safety to have a competent person evaluate the flying habits and skills of every pilot and go over any problems that appear during the flight, with the anticipation that the pilot will follow up with whatever corrective measures seem necessary.

The flight review is not to be confused with the flight proficiency check for airline pilots. (Air carrier certification under FAR Part 121.441 requires that airline pilots receive regular proficiency checks—at least once a year for pilots in command and every two years for all other pilots.) In the flight review the instructor is simply required to make certain that all applicable phases of knowledge and flight are reviewed —he does not endorse the pilot's competency as an airman. A pilot is free to select an instructor of his own choice for the review.

The suggestion made by commentators that a minimum number of hours of current flight experience be made an acceptable substitute for the biennial review was not adopted by FAA. The agency's view is that even long-time pilots may develop poor or dangerous habits unconsciously over the years without becoming aware of them.

Greater surveillance over student flying has been provided in that portion of the new rule which covers flight instructor endorsements and cross country flying. Existing regulations permit a student pilot who has accumulated 40 hours of flight time to seek endorsement from a flight instructor which will allow him unlimited cross-country solo flight. This provision is omitted in the new rule, which does, however, continue to provide for the endorsement of "repeated solo cross-country flights under stipulated conditions over a course not more than 50 nautical miles from the point of departure." This endorsement may be made only after the instructor has given the student flight instruction in both directions over the route, including takeoff and landings at the airports to be used.

A proposal that student pilots be permitted to fly aircraft in the furtherance of business activities was eliminated. Opposition to such a change, based on air safety was expressed by many persons.

Where current prerequisites for taking the written tests for pilot certificates do not require evidence of *preparation* on the part of the applicant, the new rules would require him to show that he has satisfactorily completed the required ground instruction or a home study course. The minimum passing grade for a particular written test will be determined by the Administrator and will be specified on each written test booklet furnished to the applicant. Under present rules applicants answering 70 percent of the questions on written tests correctly were passed.

Furthermore, before he can take the *flight test* a pilot must, in addition to other qualifications, obtain a written statement from an appropriately certificated flight instructor establishing that (1) He has given the applicant flight instruction in preparation for the flight test within 60 days preceding the date of application, and finds him competent to pass the test and, (2) *The student has satisfactory knowledge of the subject areas in which he is shown to be deficient on his FAA airman written test report.*

The instruction which will be required prior to the flight test differs in a number of ways from existing regulations. For example, for the private pilot certificate an applicant will have to show that he is:

- Capable of recognizing critical situations from the ground and in flight.
- Proficient in the safe and efficient operation of airplanes, including high density airport operations, collision avoidance precautions, and radio communications procedures.

A biennial flight review for every pilot is one of the new requirements of revised Part 61 of the Federal Aviation Regulations, which will upgrade standards for nearly all airmen.

In practice this will mean that the examiner will want to be certain that the pilot applicant can maintain complete control of his aircraft during all conditions that he is likely to encounter. The flight test will not be limited to the precise execution of traditional practice maneuvers such as S-turns over a road, 360 degree turns, power-off stalls. It may also include appropriate practical maneuvers such as the pilot's handling of the aircraft in the presence of other traffic, his ability to operate safely at critically slow speeds, and his entry and departure from airport patterns, his response to radio vectors, his reaction to emergency situations, and other indications of his competence under as wide as possible a variety of flight conditions.

Significant changes have been made in the eligibility requirements for the private pilot certificate (airplane). The minimum number of flight hours, 40 hours of combined flight instruction and solo time, of flight hours, has not been changed. However, the new rule sets a minimum of *20 hours of flight instruction time*, including at least:

1. Three hours of cross country.
2. Three hours of night flight, including 10 takeoffs and landings, for applicants seeking night flying privileges. (Otherwise certificate will note that it does not cover night flying.)
3. Three hours in airplanes in preparation for the private pilot test within 60 days prior to the test.

Likewise, 20 hours of solo flight time must be logged, including at least:

1. Ten hours of cross-country flights, each flight with a landing more than 50 nautical miles from the point of departure, and one with landings at three points, each of which is more than 100 nautical miles from each of the other two.
2. Three solo takeoffs and landings to a full stop at an airport with an operating control tower.

While the minimum solo cross-country time remains at 10 hours, the new rule calls for three hours of specific instruction in this type of flying and for cross-country flights of longer duration than the current rule requires.

The night flying instruction requirement is optional in the sense that pilots without this experience may be issued a private pilot certificate bearing the limitation "Night flying prohibited."

Standards for commercial pilots have been similarly upgraded. Prerequisites for airplanes include an instrument rating for an unrestricted certificate. The minimum flight time as pilot will be 250 hours, but may include 50 hours in a ground trainer. Flight instruction time required for the commercial certificate will be raised from 20 to 50 hours; longer cross-country training flights will be mandatory; and five hours of night flying experience will be needed, during which time the aircraft must be controlled solely by the pilot applicant.

The new rules affect virtually all aspects of pilot certification and instructor ratings in airplane, rotorcraft and gliders. The comments of numerous government and industry committees, as well as hundreds of individual pilots, have had their impact on the final wording. FAA's objective is to enhance the competency of *all* pilots and rating holders so that aviation may continue to grow with a minimum of regulation and a maximum of safety. Better instruction and sharper pilots will mean greater air safety for all who fly.

Current subscribers to Volume IX of the Federal Aviation Regulations will receive the amended portions of Part 61 in the mail. Copies of the new rule as published in the Federal Register on Feb. 1, 1973, Volume 38, No. 21, may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price is 20 cents per copy.

Highlights of Old and New Requirements for Pilot Certificates (Airplane):

PRIVATE PILOT	**Existing Regulations (61.85)**	**New Regulations (61.109)**
Instruction and Practice	40 hours	40 hours
Instruction	3 hours following first solo cross-country	20 hours (3 cross-country)
Solo	20 hours (10 cross-country)	20 hours (10 cross-country)
Controlled Airport	None	3 solo takeoffs and full-stop landings at an airport with operating control tower
Night Flying Instruction	None	3 hours, including 10 takeoffs and landings.
COMMERCIAL PILOT	**Existing (61.115)**	**New (61.129)**
Certificates	None	Private and Instrument (unrestricted)
Flight time as pilot	200 hours	250 hours
Allowable simulator time	None	50 hours
Pilot in command time	100 hours	100 hours
Flight Instruction	20 hours	50 hours (10 in plane with controllable pitch prop, retractable gear and flaps)
Instrument Instruction	10 hours	10 hours (5 in airplane)
Cross Country	50 hours (includes one three-leg flight 350 mi.)	50 hours (includes one three-leg flight 200 miles each leg.)

"I have vertigo and the plane is out of control!"

The near-hysterical voice of the pilot left no doubt that his troubles were piling up.

A new voice came over the air and, with an authoritative and deliberate calm that contrasted sharply with the mood of the pilot, took over the situation.

"All right, Three Seven Lima, stay calm. We're going to get you out of this and on the ground if you do what we tell you. First we have to get the wings level. Turn loose of everything a minute and don't look out. Take your feet off the rudders. Look at the artificial horizon and see what the little airplane is doing. We have to straighten up the little airplane . . . gently . . . gently. Don't look out, just look at the little airplane in the artificial horizon. . . ."

Gradually the pilot was calmed to the point where he could follow directions, and finally the plane was flying in a straight line and they could all get on with business of the surveillance approach. This approach, in which the controller uses radar to direct the pilot in an instrument approach to a landing, was a last resort effort to save four lives—the final act of a drama that had been going on for more than 90 exhausting minutes.

It had been just after noon when Albany, N.Y. approach control received a call from the flight service station advising that a *Cessna* 172 was over Cambridge VOR, about 30 miles northeast of Albany County Airport, VFR, on top of the clouds, requesting assistance. Soon afterward the pilot called the tower directly. He was en route from Manchester, N.H. to Schenectady, N.Y. with his three small sons. His magnetic compass was "spinning", he said. He had a total of 62 hours pilot time, virtually no instrument training, had never flown in the clouds or made a practice instrument approach . . . not a very cheerful picture.

Also in the area was Robert Heyman, an instrument pilot from New York flying in a *Bonanza*. Heyman heard of the incident on the radio and quickly volunteered his assistance. The Albany tower vectored him to a rendezvous with the 172 while they weighed the alternatives for getting the novice down through the clouds.

Sympathetic pilots, listening on the "party line", called in with weather reports. When breaks in the clouds were reported near Glens Falls, 30 miles north, the 172 and the *Bonanza* flew there with the *Cessna* circling overhead while the *Bonanza* descended to search in vain for an adequate opening over the airport. When this attempt was abandoned they headed back toward Albany; the 172 had about 90 minutes of fuel remaining.

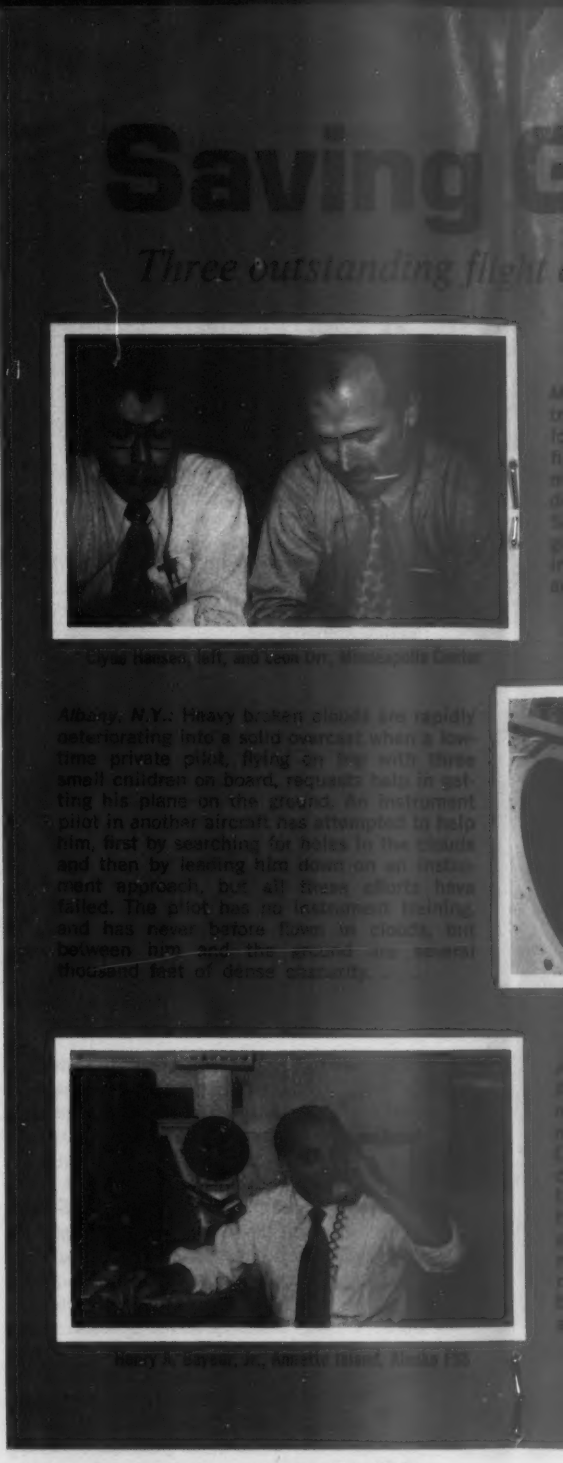
Next they started toward Poughkeepsie, about 45 minutes south, where conditions looked better, but before the troubled pilot and the escorting *Bonanza* got out of the Albany area new reports indicated that conditions to the south had deteriorated to a solid overcast.

The list of options was narrowing fast, and now it seemed the best chance of getting the *Cessna* on the ground was to have it follow the *Bonanza* down on an ILS approach to Albany County Airport. The pilot of the 172 agreed to try and added "I just want to get this thing on the ground. One of my tanks is reading empty."

As soon as they entered the clouds, however, it was obvious that the plan would not work: the pilots immediately lost sight of each other in the extremely dense overcast. The only course left was to bring the pilot down alone on a surveillance approach. Reluctantly the *Bonanza* pilot cruised above while he watched the 172 slip down into the clouds alone. He knew what a challenge it is for an inexperienced pilot to maintain control of a plane in the clouds, by reference to the instruments alone. And with those three little boys in the cabin. . . .

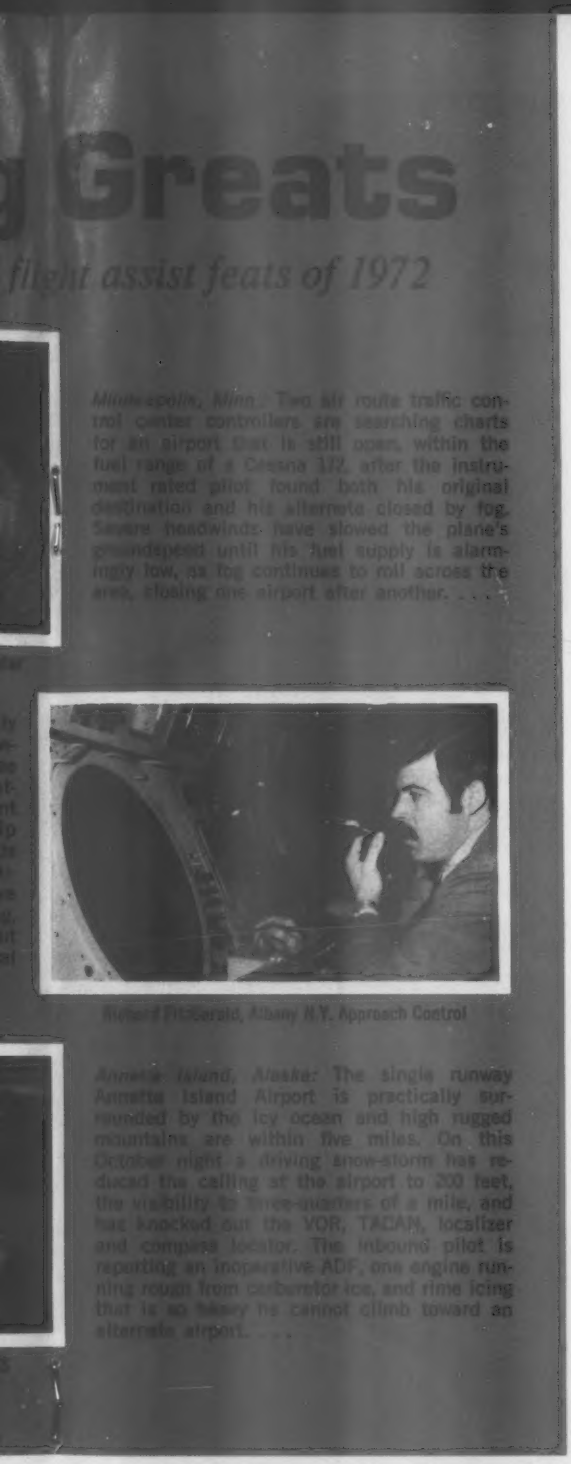
Not surprisingly, the next report from the 172 pilot was that he had vertigo and the plane was out of control. It was at this point that controlled Dick Fitz Gerald took over the Albany approach control microphone to begin the ceaseless stream of instructions which would eventually get the airplane safely on the ground. Fitz Gerald is a qualified instrument pilot and a flight instructor, and his calm assurance was evident as he directed the pilot to right the plane and get it re-established on the landing approach. Once more the pilot reported frantically that he had lost control, and once more Fitz Gerald talked him back to self control—and then the plane was finally out of the clouds and headed VFR toward the airport.

Just when the incident was ended the pilot called again—with a new problem. His engine had quit. Fitz Gerald gave him suggestions for starting it, and also gave him some tips for emergency landing the plane in case it came to that. However, the pilot managed to get the engine started again, and finally made a safe landing at 2:29—after nearly two and a half hours of uncertainty and aerial meandering. For the three small boys in the cabin, it was quite an adventure. For their pilot father, it was, hopefully, a lesson in flight preparation. For Albany Tower controller Dick Fitz Gerald, it was all in a day's work.



From De Kalb, Ill. to Shawano, Wis. it is a short flight—maybe 180 nautical miles as the crow flies—but when the pilot of a *Cessna* 172 made the trip recently he flew well over 400 miles to get there, and used up all but four gallons of a full tank of fuel. Obviously he did not fly as the crow flies—in fact, it is doubtful that crows or any other kind of birds were out on that nasty October night in northern Wisconsin.

For an instrument-rated pilot (who had been flying since 1939) in a well-equipped airplane, the 300-mile trip as planned due north to Land O'Lakes was a routine flight. Having to declare a missed approach at Land O'Lakes after finding that airport fogged in was more or less routine, and as he climbed back to altitude he called the air traffic control center to request clearance back to his alternate at Wausau, a hundred miles to the south. It was at this point that the flight began to assume a new and less routine profile: Center advised that fog had moved into Wausau too, and that airport was also below minimums. He would have to find another alternate.



Richard FitzGerald, Albany N.Y. Approach Control

In the Minneapolis center two controllers, Leon Orr and Clyde Hansen, spread out sectional charts, and went to work to find a suitable spot for the pilot to land within range of his estimated 75 minutes remaining fuel. A hurried weather check revealed that surrounding airports were reporting zero ceilings with visibility ranging from ⅛ to ¾ mile, with one exception. Green Bay had an estimated ceiling of 2,500 feet broken, 10,000 feet overcast, and four-mile visibility with fog. The weather was acceptable, but a calculation of the plane's ground speed showed it was making only about 60 knots at its present altitude of 7,500 feet. At that rate there would not be enough fuel to get him to Green Bay. The pilot was cleared to descend to 3,600 feet, the minimum en route altitude, where it was hoped the winds would be less adverse.

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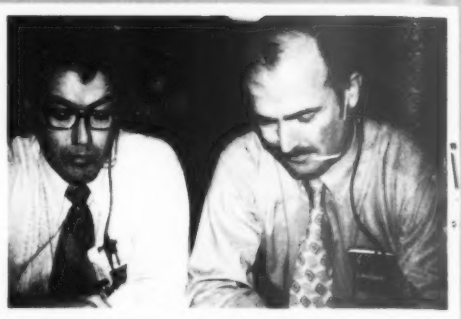
The grateful pilot and passenger made their way to the flight service station to thank Bayeur personally, and he in turn complimented the pilot for his calm and skillful manner in making a most difficult approach under the worst possible conditions.

Ruth Taksel

Saving G

Three outstanding flight



Clyde Hansen, left, and Leon Orr, Minneapolis Center

Albany, N.Y.: **Heavy broken clouds are rapidly deteriorating into a solid overcast when a low-time private pilot, flying on top with three small children on board, requests help in getting his plane on the ground. An instrument pilot in another aircraft has attempted to help him, first by searching for holes in the clouds and then by leading him down on an instrument approach, but all these efforts have failed. The pilot has no instrument training, and has never before flown in clouds, but between him and the ground are several thousand feet of dense obscurity. . . .**

Henry A. Bayeur, Jr., Annette Island, Alaska FSS

"I have vertigo and the plane is out of control!"

The near-hysterical voice of the pilot left no doubt that his troubles were piling up.

A new voice came over the air and, with an authoritative and deliberate calm that contrasted sharply with the mood of the pilot, took over the situation.

"All right, Three Seven Lima, stay calm. We're going to get you out of this and on the ground if you do what we tell you. First we have to get the wings level. Turn loose of everything a minute and don't look out. Take your feet off the rudders. Look at the artificial horizon and see what the little airplane is doing. We have to straighten up the little airplane . . . gently . . . gently. Don't look out, just look at the little airplane in the artificial horizon. . . ."

Gradually the pilot was calmed to the point where he could follow directions, and finally the plane was flying in a straight line and they could all get on with business of the surveillance approach. This approach, in which the controller uses radar to direct the pilot in an instrument approach to a landing, was a last resort effort to save four lives—the final act of a drama that had been going on for more than 90 exhausting minutes.

It had been just after noon when Albany, N.Y. approach control received a call from the flight service station advising that a *Cessna* 172 was over Cambridge VOR, about 30 miles northeast of Albany County Airport, VFR, on top of the clouds, requesting assistance. Soon afterward the pilot called the tower directly. He was en route from Manchester, N.H. to Schenectady, N.Y. with his three small sons. His magnetic compass was "spinning", he said. He had a total of 62 hours pilot time, virtually no instrument training, had never flown in the clouds or made a practice instrument approach . . . not a very cheerful picture.

Also in the area was Robert Heyman, an instrument pilot from New York flying in a *Bonanza*. Heyman heard of the incident on the radio and quickly volunteered his assistance. The Albany tower vectored him to a rendezvous with the 172 while they weighed the alternatives for getting the novice down through the clouds.

Sympathetic pilots, listening on the "party line", called in with weather reports. When breaks in the clouds were reported near Glens Falls, 30 miles north, the 172 and the *Bonanza* flew there with the *Cessna* circling overhead while the *Bonanza* descended to search in vain for an adequate opening over the airport. When this attempt was abandoned they headed back toward Albany; the 172 had about 90 minutes of fuel remaining.

Next they started toward Poughkeepsie, about 45 minutes south, where conditions looked better, but before the troubled pilot and the escorting *Bonanza* got out of the Albany area new reports indicated that conditions to the south had deteriorated to a solid overcast.

The list of options was narrowing fast, and now it seemed the best chance of getting the *Cessna* on the ground was to have it follow the *Bonanza* down on an ILS approach to Albany County Airport. The pilot of the 172 agreed to try and added "I just want to get this thing on the ground. One of my tanks is reading empty."

As soon as they entered the clouds, however, it was obvious that the plan would not work: the pilots immediately lost sight of each other in the extremely dense overcast. The only course left was to bring the pilot down alone on a surveillance approach. Reluctantly the *Bonanza* pilot cruised above while he watched the 172 slip down into the clouds alone. He knew what a challenge it is for an inexperienced pilot to maintain control of a plane in the clouds, by reference to the instruments alone. And with those three little boys in the cabin. . . .

Not surprisingly, the next report from the 172 pilot was that he had vertigo and the plane was out of control. It was at this point that controlled Dick Fitz Gerald took over the Albany approach control microphone to begin the ceaseless stream of instructions which would eventually get the airplane safely on the ground. Fitz Gerald is a qualified instrument pilot and a flight instructor, and his calm assurance was evident as he directed the pilot to right the plane and get it re-established on the landing approach. Once more the pilot reported frantically that he had lost control, and once more Fitz Gerald talked him back to self control—and then the plane was finally out of the clouds and headed VFR toward the airport.

Just when the incident was ended the pilot called again—with a new problem. His engine had quit. Fitz Gerald gave him suggestions for starting it, and also gave him some tips for emergency landing the plane in case it came to that. However, the pilot managed to get the engine started again, and finally made a safe landing at 2:29—after nearly two and a half hours of uncertainty and aerial meandering. For the three small boys in the cabin, it was quite an adventure. For their pilot father, it was, hopefully, a lesson in flight preparation. For Albany Tower controller Dick Fitz Gerald, it was all in a day's work.

From De Kalb, Ill. to Shawano, Wis. it is a short flight—maybe 180 nautical miles as the crow flies—but when the pilot of a *Cessna* 172 made the trip recently he flew well over 400 miles to get there, and used up all but four gallons of a full tank of fuel. Obviously he did not fly as the crow flies—in fact, it is doubtful that crows or any other kind of birds were out on that nasty October night in northern Wisconsin.

For an instrument-rated pilot (who had been flying since 1939) in a well-equipped airplane, the 300-mile trip as planned due north to Land O'Lakes was a routine flight. Having to declare a missed approach at Land O'Lakes after finding that airport fogged in was more or less routine, and as he climbed back to altitude he called the air traffic control center to request clearance back to his alternate at Wausau, a hundred miles to the south. It was at this point that the flight began to assume a new and less routine profile: Center advised that fog had moved into Wausau too, and that airport was also below minimums. He would have to find another alternate.

g Greats

flight assist feats of 1972

Minneapolis, Minn.: **Two air route traffic control center controllers are searching charts for an airport that is still open, within the fuel range of a Cessna 172, after the instrument rated pilot found both his original destination and his alternate closed by fog. Severe headwinds have slowed the plane's groundspeed until his fuel supply is alarmingly low, as fog continues to roll across the area, closing one airport after another. . . .**

Richard FitzGerald, Albany N.Y. Approach Control

Annette Island, Alaska: **The single runway Annette Island Airport is practically surrounded by the icy ocean and high rugged mountains are within five miles. On this October night a driving snow-storm has reduced the ceiling at the airport to 200 feet, the visibility to three-quarters of a mile, and has knocked out the VOR, TACAN, localizer and compass locator. The inbound pilot is reporting an inoperative ADF, one engine running rough from carburetor ice, and rime icing that is so heavy he cannot climb toward an alternate airport. . . .**

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Ruth Taksel

Famous
Flyers

Sopwith and His Camel

Young Tom Sopwith, bundled up against the December cold, set a world endurance and distance mark in this **Howard Wright** in 1910.

At eight o'clock in the morning of December 18, 1910, young Tom Sopwith bounced along the grassy field at Eastchurch, England, in his 60 hp. Howard Wright biplane. Slowly that primitive plane rose in the sky and turned toward the continent of Europe.

Sopwith, then 22 years old, was perched on the precarious single seat on the lower wing. The engine with its dual propellors was behind him, and he had built a wind shield in front of him. He was wearing heavy gloves, and his legs were wrapped in thick puttees as protection against the chilly December winds. At 9 a.m. he crossed over the Channel port of Dover at an altitude of 1,200 feet, air speed 50 mph, with a following breeze of 20 mph. He was soon out over the water, heading toward the continent, and the only navigational instrument he had on board was a hand compass.

It was that pioneer epoch of aviation when pilots were vying with each other to set new records with this marvelous new invention, the airplane. On that December day in 1910, Sopwith was attempting to win the Baron de Forest prize of 4,000 English pounds, offered to any Englishman who could make the longest flight across the Channel by the end of 1910.

Sopwith had only started flying a few months before the year's end, but he was a young man of boundless confidence. He had been born in London in 1888, the son of a wealthy civil engineer, and for a time it seemed that he might follow in his father's footsteps. He took a degree in civil engineering, but he was under no urgency to make an early career choice. His father had established a fund which gave him a lifetime income. His love of motorcycles in his teens turned into a fascination for motorcars and motorboats and he also liked to sail, a hobby which continued throughout his long career in aviation.

In September of 1910, he was yachting near Dover when he heard that the Frenchman John Moisant had just landed a few miles away at Willows Wood after a channel crossing in an airplane. Sopwith went to inspect the plane, a Blériot, and was fascinated. As he ran his hands over the fuselage and examined the engine, he decided that he must learn to fly.

He took two flights as a passenger in a *Farman*, then bought a 40 hp monoplane from the English aircraft manufacturer Howard T. Wright (no relation to the American Wrights). He had never flown a plane before and he had received no formal instruction of any kind, but he felt that his native grasp of mechanics and his engineering training and his experiences in autos and motorboats was all he needed. He managed to get the plane successfully off the ground, but when he was about 300 yards into the air he pulled the control stick back too sharply, and the machine nosed up and stalled. He crashed, breaking the propeller and smashing a wing, but escaping injury himself.

He took some flying lessons, and by the time his plane was repaired in early November he was back in the skies again. His instructors observed that he had an almost intuitive understanding of the principles of heavier-than-air flight. He began to experience some difficulty with the 40 hp engine, which eventually burst a cylinder head, and he traded it in for a 60 hp biplane. On November 21, he felt he was ready for his

During WW I aviators of British Naval Squadron Ten found the speed and maneuverability of the **Camel** invaluable in countering attacks by **Albatross Scouts,** German fighter planes.

pilot's certificate. Examiners from the Royal Aero Club came out to supervise the test, which required three flights, each one around a three mile circular course.

Awarded Certificate no. 31, he was immediately off in quest of records to prove what he could do with his plane. A cash prize of 500 pounds was offered for the longest flight made in Britain before the end of 1910. The existing British record at the time was 94 miles, covered in 2 hours and 24 minutes. Sopwith flew around a course which had eight pylons set a mile apart. His Wright biplane cruised at a speed of between 30 and 40 mph., and when he landed he had flown 107 miles in 3 hours and 12 minutes, a new British record for endurance and distance.

A few weeks later he was airborne over the English Channel on the quest of the much richer de Forrest prize of 4,000 pounds for a record channel crossing. The flight on that December day in 1910 was Sopwith's first over water, and it lasted three hours and 40 minutes. He landed in Belgium, 177 miles distance—a world endurance and distance mark.

Above—first true Sopwith design was three-place biplane with non-inflammable celluloid windows. Below—Sir Thomas Sopwith with Lady Sopwith, left, his sister May (who encouraged his career) and son, Thomas, Jr.
Photos Harleyford Publications

On the following January 31, Sopwith received his prize at a Royal Aero Club banquet in London. The Duke of Atholl, in presenting the award, suggested that the plane could become an invaluable device in time of war. Sopwith pondered the idea for a few moments, and in his acceptance remarks he said he would be happy to assist the Crown in that endeavor if needed.

Sopwith decided to make his own survey of the current state of aircraft manufacturing. In 1911 he visited France, and purchased a 70 hp. *Blériot* monoplane. Later that year he shipped the Blériot and his own Wright biplane to the United States for experimental competition with American aircraft. He flew the Blériot in a Chicago meet, where he won more speed and endurance races than any other contestant, gaining $14,000 in total prizes. He won a number of other prizes during his year in America, including the Boston Lighthouse race. And he carefully inspected American aircraft, purchasing a Burgess Wright biplane.

At the conclusion of his tour he had his three planes shipped back to England, and with his little fleet he opened a flying school at Brooklands. But his major interest now lay in the area of aircraft design, and he began to assemble a staff. He hired as his chief mechanic Fred Sigrist, a mechanic who had worked on his earlier motorboats; and he enlisted a young Australian, Harry Hawker, as his draftsman and test pilot.

In 1912 they constructed their first airplane, a three seater biplane, with an overall length of 29 feet, and a wide wing span of 40 feet. With an 80 hp engine the plane was able to cruise at about 75 mph. It had an endurance time of 2.5 hours, and a rate of climb of 1,000 feet in 2 1/3 minutes. Later that year Hawker flew it to an altitude of 11,450 feet, a new British record. Sopwith Aviation was in business.

The year 1914 was a climactic one for Sopwith. His plane won the prestigious Schneider cup; he married Beatrice Ruthven; and World War I broke out on August 4. Sopwith immediately increased the size of his staff and began producing military aircraft. By the end of the war he had turned out 11,000 airplanes.

In the early years of WWI he built seaplanes and long endurance aircraft which could be used for bombing and reconaisance. But as the war dragged on, speedy Fokkers with a synchronized machine gun firing through the propellor arc were giving Germany mastery of the skies. What the Allies needed desperately was a small, speedy but highly maneuverable aircraft. Then Sopwith began turning out what became known as "Sopwith's Zoo" (he named his planes for birds and animals—the *Pup, Camel, Dolphin, Snipe, Bulldog, Dragon, Grasshopper, Salamander,* and *Cuckoo*).

Sopwith's most famous plane was obviously the *Camel*, first produced in 1917. This aircraft shot down more enemy planes than any other British fighter in WW I. The revolutionary feature of the plane—as designed by the creative threesome of Sopwith, Sigrist, and Hawker—was its twin Vickers guns synchronized to fire through the propellor arc (previous fighters carried only one machine gun). The *Camel*, a single seater biplane, underwent many modifications and redesigns during the war years, but it was basically a powerful machine of about 150 hp with speeds up to 120 mph. It was 18 feet long with a wing span of 28 feet. It weighed 1,482 pounds and it had a ceiling of 15,000 feet. It was fast, manueverable, and seemingly had a killer instinct. In 1918, the famed "Red Baron," Manfred von Richthofen, was shot down by Captain Roy Brown flying a Sopwith *Camel*. Based on land and at sea, flying by day and night, Sopwith *Camels* effectively attacked fighters, bombers, balloons, and dirigibles, clearing the skies over Britain. Air supremacy passed to the Allies.

Sopwith became one of England's great wartime heroes, but the postwar years brought him financial difficulties in the process of winding down his tremendous airplane output, and in 1920 he was obliged to disband his firm. Its place was taken by the H. G. Hawker Co., with essentially the same management team still headed by Sopwith. During WW II they again went into high gear production, turning out over 40,000 aircraft, including the famous Hawker *Hurricane*.

Sopwith was later knighted for his contribution to the aerial defense of Great Britain in two World Wars. In 1963 he retired as an active designer, although retaining his title as President of what is now Hawker Siddeley. Sir Thomas is responsible for many important technical breakthroughs in aviation, but in the public mind his fame will always be linked to the Red Baron's nemesis—the *Camel*. ■

If a Body Meet a Body

Why airmen advisories are an essential part of flight planning.

"Hey, what was that? Did you see that?"

You saw it all right. In fact you are still so shook up at seeing that human form plummet down past your wing edge that you cannot trust yourself to speak, but nod in what you hope is a diffident manner.

"Say—I think it was a person—a body! You think it was a body falling down?"

"Uh, well, could have been, I suppose."

"What else could it be? I saw him with my own eyes. He wasn't ten feet away—had a little yellow moustache, and his eyes were shut, like he was praying. My Gosh—you suppose someone shoved him out of a plane?"

"Maybe it was a dummy."

"No—who'd push a dummy out of a plane?"

"A pilot who didn't like dummies, I guess."

"Listen, shouldn't we report this to someone?"

You nod, reluctantly keying the microphone, visualizing the long train of questions to come, the forms to be filled out, the interviews, the wearisome snarl of red tape apparently destined to terminate what had started out as a very promising flight, with every detail carefully planned in advance.

In point of fact you had begun planning for this flight over a month ago, shortly after your new neighbor moved in, and you met him, and observed that he was a man of varied interests but no specific hobbies or sports, which was good. You saw that he was impressed to learn that you were an airplane pilot and owner, which was also good. You took pains not to let him hear any of your wife's comments on the expense of maintaining an aircraft *and* a *family*, or on the time away from house/yard chores it involves, or on the imaginary dangers she was always fretting about.

You dropped a few inconspicuous hints now and then about having room in the right-hand seat for a fellow adventurer, and you had a shrewd notion that he was aching to volunteer but did not want to presume on a short acquaintance. So you laid a little trap for him at the curbside when you were both hauling out the trash cans on Friday morning. After his customary comment about it looking like a great day, you had examined the sky with a professional air and opined that the front would probably go through tonight and tomorrow should be perfect for flying. Ideal time of the year to hop down to that pine-covered island at the mouth of the bay. *Ever been there?*

"No, but I heard about it—"

"Say, I've got an empty seat. Come along."

"Well, I wouldn't want to bother you."

"No bother. You could help keep the charts in order. Glad to have you."

"You don't say. Hey, I'd like that. Oh-oh, Sara might not like it. She's got some chores for Saturday—."

"Be back early, way before dark. Plenty of time for chores. Pick you up at eight, Partner."

"Geronimo," he said, with a little boy smile, and you knew you had him hooked.

But as you drove down to the airport with him the next morning you could see that his enthusiasm had been pecked away at by that familiar nemesis of airmen, a concerned woman.

"Say, I heard that a lot of people get, uh, killed or something in these little planes."

"Sure. About one-fiftieth as many as get killed in cars. You thinking of buying a bike?"

"No. But say, I heard they have a lot of mid-air collisions. There was one about a month ago, down near Waterside. Some student pilots and—"

"Couple of kids. Didn't know what they were doing."

You explained to your friend and neighbor and (prospective) partner in the airplane that a mature man who has learned to accept responsibilities and take care of himself and his property is rarely involved in an aviation accident. *(Accidents don't happen, they are caused by careless habits.)* You showed him the checklist and had him call out the items for you as you progressed carefully through the airplane preflight, explaining to him exactly what you were doing. Then you took him into the pilot's lounge where you introduced him to the boys as your new "flying partner," and you could see that he was enjoying the impression. *(Pilots are a breed apart.)*

He had tensed up a bit again at the takeoff, but you kept him occupied reading from the checklist and once at your cruise altitude you put the wheel in his hands for brief intervals while you studied the chart —and your "partner" out of the corner of your eye. He was hooked, all right. On the way back you would make him an offer he could never resist. You would get your CFI current, and teach him to fly; he would come up with half your equity in the

airplane and assume half the cost of payments and maintenance. After he got his ticket, it's his airplane every other weekend.

The sod strip on the island was springy but firm as you came down, and you made a smooth-as-silk landing with your "partner" following you through, obviously delighted. *(Flying is fun)* You have lunch in the airport coffee shop and swap a few flying yarns with other pilots before getting back to the plane. *(Flying gives you membership in an exclusive and elite group—open to anyone.)* The engine was hardly cold, but you went through the entire preflight list carefully, for as you told your partner, "In aviation, safety is the name of the game."

On the way back he was eager for some more stick time, so you let him have the wheel for a while, even though you noticed that you were drifting steadily eastward. You checked the chart, and there was no prohibited zone or any other problem in view, and you were not in a hurry, plenty of fuel, so you just took it easy getting ready to pop the question.

You were about to open your mouth when unbelievably that *Thing* hurtled down past the wing, at once erasing the sense of well-being and genteel adventure you had been carefully building up. Now you are involved in some kind of wretched mishap and you have to let the FSS know. They ask you to stand by. Then:

"NINER TWO TANGO, are you on a flight plan?"

"Negative."

"Well, it appears you are passing through an area where extensive parachute jumping is taking place. They are freefalling from 13,000 down to about 2,000. Suggest you alter your course to the south to avoid area described in airman advisory . . ."

Parachutists! That's what nearly pierced your starboard wing. You put the airplane in a steep right back for a 90 degree turn and exit the jump area at near redline speed. Behind you and near the deck you spot a number of orange and white canopies drifting earthwards. You are unable to locate the jump planes, but no more bodies rain down, and you trust that you are now out of the area. You explain the situation to your "partner", adding that this sort of thing would never have happened if you had gotten a pre-flight briefing from the flight service station or even monitored the hourly broadcasts on the radio, which, as it happens in this case, uh, we did not.

"Oh, boy!" he sighs. "Wait till my family hears about this."

"Uh, well, maybe you don't want to tell them—might bother them a little . . ."

"Are you kidding? You know something? Nobody in my household has paid any attention to anything I've said at the dinner table for months. They don't think anything interesting *ever* happens to an accountant. Wait till they hear about this. Oh, boy! Say, what's the upkeep on a bird like this?" ■

BRIEFS

■ BAD BREAK. Investigation of a recent serious light airplane accident revealed that an elevator cable had broken at a point near the battery. Subsequent examination indicated that much of the cable had corroded completely through at that point, but except in the immediate area of the break the cable was well preserved. Aircraft owners are advised to check occasionally to be sure no vital control components are subject to corrosion from battery fluids and fumes.

■ SEEING THINGS. A revised FAA Advisory Circular, AC 70-7460-1B, describes latest FAA standards for marking and lighting obstructions to air navigation, and establishes the methods, procedures and equipment types to be used. Copies are available free from FAA TAD 484.3, Washington, D.C. 20590.

■ FOR TRAVELING ACCOUNTANTS. A proposal by FAA would amend Part 91 to permit the use of portable or pocket electronic calculators on board aircraft. Because electronic devices may interfere with communications and navigation systems of the aircraft, an existing rule bans their use on instrument flights, with the exception of items such as hearing aids, heart pacemakers, shavers, etc. Comments on the proposal, 72-33, should be received in duplicate before March 27, 1973, by FAA AGC-24, Washington, D.C. 20591.

■ TWO WRITTEN TEST GUIDES have been updated by FAA and are now available. The Instrument Rating Written Test Guide (Airplane) outlines the scope of the written test and directs applicants to appropriate study materials. The Private Pilot Written Test Guide includes 71 exercises which cover the material presented in each section and chapter of the "Pilot's Handbook of Aeronautical Knowledge". Each guide includes a sample written test, presented in a format similar to that currently in use. Guides are available from Superintendent of Documents, GPO, Washington, D.C. 20402. AC 61-8C, Instrument Rating Written Test Guide, Stock #5007-00183, is $1.25. AC 61-32A, Private Pilot Test Guide, Stock #5011-0056, is $1.75.

■ CLEAN AIR IS IMPORTANT when it comes from a portable oxygen supply, too. In a recent incident a pilot lost consciousness at about 26,000 feet although he had his oxygen mask on with full oxygen tanks. After a drop of several thousand feet the pilot fortunately regained consciousness and pulled the airplane out of the dive, but only after it had sustained severe damage from overstress. A post-flight inspection revealed that the screen inside the mask hose was found plugged with lint. Pilots anticipating the use of oxygen in flight are cautioned to include this item in their pre-flight inspection.

THE FACE IS FAMILIAR. Academy Award winner Cliff Robertson, left, in his latest role of FAA Accident Prevention Counselor, receives a "Safety Sentinel" emblem from John L. Baker, FAA Assistant Administrator for General Aviation. Robertson, an active pilot, was one of the first to wear the new insignia of the Accident Prevention Program, which symbolizes "greater safety through more alert attitudes." Insignia denotes "Specialist" for FAA personnel in the program and "Counselor" for non-agency volunteers. Window decals are issued to specialists and counselors and also to pilots taking the FAA voluntary proficiency flight.

Proposal Would Standardize VFR Distance-from-Clouds

A change in the rule that now permits VFR flight under 1,200 above ground in uncontrolled airspace "clear of clouds" has been proposed by FAA. The proposal would require the same separation from clouds for VFR flights below 1,200 feet that is now required in uncontrolled airspace between 1,200 and 10,000 feet, and in controlled airspace from the surface to 10,000 feet. The one-mile visibility requirement would not be affected.

Under the proposed rule, all VFR flights under 10,000 feet MSL would be required to remain at least 500 feet below, 1,000 feet above, or 2,000 feet horizontally from clouds.

Comments on the proposal concerning the clearance-from-clouds requirements (Notice 72-35; Docket #11350) should be received by FAA, AGC-24, Washington, D.C. 20591 by March 22, 1973.

Firms to Plan FSS Modernization

Preliminary plans for a streamlined flight service station system have been unveiled by FAA, and two firms are now participating in a nine-month design competition. A trial facility will then be built and tested in the Raleigh-Durham, N.C. area.

As projected, the modernized FSS network would be phased in during the next ten years and would provide pilots better service at a fraction of the overhead cost of the present 300+ station system. The new concept consists of 20 to 50 large 24-hour manned "hub" FSS's, plus some 3,400 automated self -briefing stations (at least one at each of the nation's 2,500 active airports) with push-button access to flight planning and weather information, flight plan filing capability, and a direct phone line to a hub station. Hubs would provide en route communications, inflight assistance, search and rescue, NAVAID monitoring and telephone pilot briefing.

FAA Adopts Transponder Standards

FAA has adopted regulations prescribing technical standards for all transponders, with separate categories for airliners and general aviation, and also separate classes for use above or below 15,000 feet MSL. *Transponders are not required equipment for general aviation* except in positive control airspace (above 18,000 feet) and in designated terminal control areas, but all sets being used must meet the standards. The new rule applies to all transponders installed after January 1, 1974, and to all sets in use after July 1, 1975.

FAA ALERT LIST

The following aircraft were listed at press time with the FAA Office of Air Transportation Security as stolen or missing:

Cessna 150	22487
Cessna 150	4844X
Cessna 150	51109
Cessna 150	8080F
Cessna 172	2412U
Cessna 172	3011U
Cessna 172	3894Q
Cessna 182	5706B
Cessna 182	7442Q
Cessna 210	3884Y
Cessna 210	5774J
Cessna 210	5775J
Cessna 210	7444E
Cessna 337	5439S
Piper PA-23	6115Y
Piper PA-24	8445P
Piper PA-28	8529N
Piper PA-32	8919N

If you see any of these aircraft advise the nearest FAA flight service station at once. Of course, any listed plane may since have been recovered by the owner. If your aircraft is stolen, notify the local police and flight service station.

New Prices for Government Publications Announced by GPO

Newly increased prices for Federal publications have been announced by the Public Printer effective January 1, 1973. Price increase is attributed to rising costs of production and distribution. One year's subscription to FAA AVIATION NEWS will be $3.50 per year in this country, or $4.00 per year abroad. Single copies will be 35 cents. New prices of other commonly used aviation publications are as follows:

International Notams	9.00
Acceptable Methods, Techniques and Practices, Aircraft Alterations 43:13-2	3.50
Aircraft Engine and Propeller Type Certificate Data Sheets and Specifications	28.50
Aircraft Type Certificate Data Sheets and Specifications	72.00
Airman's Information Manual, Part I, Basic Flight and ATC Procedures	8.50
Airman's Information Manual, Part II, Airport Directory	8.50
Airman's Information Manual, Part III & IIIa, Operational Data and NOTAMS	44.00
Airman's Information Manual, Part IV, Graphic Notices and Supplemental Data	3.00
General Aviation Inspection Aids Summary	5.00
Summary of Supplemental Type Certificates	41.00

Orders for subscriptions or renewals received before January will be honored at the old rate.

FAA Aviation News welcomes comments from the aviation community. We will reserve this page for an exchange of views. No anonymous letters will be used, but names will be withheld on request.

• Effective Noise Filters

What brand or type of ear plugs are effective in filtering out harmful aircraft engine noise? All we have found are inexpensive ones for showering and swimming.

Incidentally, your article on this subject (October, 1972) tells us to check the fit of the plugs by pressing on them gently after insertion and noting whether the noise level drops. What does this tell you?

Charles Keepers
Fremont, Ohio

If the appreciable noise level drops when you press gently on the plug, it is not seated properly in your ear, and may not be suitable for you. Swim or shower plugs do not work properly against aircraft noise. Your fixed base operator will carry or can obtain effective ear plugs. FAA does not endorse any particular brand, but your local GADO inspectors may have some recommendations.

• Plugged Pitots

Your November 1972 article "Preflight in Haste" brought back memories of an incident in my own student flying days. Once I, too, found I had no airspeed indication on the takeoff run, on a night practice flight, but my instructor insisted that I take off anyway, using RPM and altitude as reference, not only for the takeoff but also to land. The culprit in my case was a tiny droplet of water frozen in the pitot cover hinge area, invisible in the flashlight beam during the preflight inspection.

Apparently this problem is not too unusual, because I recall another student pilot who picked up an insect in his pitot tube during flight. Result: no airspeed. I think every student should be schooled in this type of emergency. It taught me another thing. I now do the preflight checking myself, always, keeping passengers well clear until I am finished. Then we fly.

Paul Eriksen
Wilmington, Del.

• Non-tower Airport Traffic

I have read Advisory Circular 90-42A, "Traffic Advisory Practices at Nontower Airports" and I feel that if every pilot made all the lengthy announcements you suggest the situation would be worse rather than better because of added frequency congestion, which is already bad enough. I suggest the following changes for use during busy periods like Sunday afternoons.

When announcing your position on the radio always give the airport name *first* ("Strawn Airport, Bonanza 12345 . . ."). That way other pilots would only need to note the transmissions pertinent to them, and could ignore all the others. Use common sense in making your position reports—in very light traffic a base or final call could be eliminated. When communicating with the flight service station request your answers on the VOR, and if they don't answer at once be patient—they are probably busy on another channel. Cut out personal calls. File flight plan on the ground, not in the air. And none of this should take the place of eyeballing, which is essential regardless.

Bernard M. Muenzer
Hyde Park, N.Y.

AC-90-42A was not expected to be a cure-all for all the traffic problems at uncontrolled airports, but FAA does feel that its suggested practices will help improve the safety record at these locations. Although rigid compliance by pilots might add slightly to frequency congestion, our concern for safe flight is an overriding consideration. Your comments will be considered when the Advisory Circular is next revised.

UNICOM frequencies are assigned by FCC and FAA is working with them to ease the congestion on 122.8 MHz. Some of the problems you mention are being alleviated by pilots like yourself who recognize that radio transmissions must be kept to a minimum for the maximum benefit of all users. Incidentally, a new VHF discrete frequency plan for FSSs provides greater frequency flexibility and will hopefully minimize congestions on this score.

• The November Question

Pilots who have been taught to "speak like a pro" heartily endorse the comments of Van Nuys tower chief Peterson in the November Forum, on using as few words as possible on the radio. Not only does this clean up the frequencies but it is good discipline for pilots to do it correctly. However, what do we do about the current FCC campaign to hear that "November" on the first call-up by a pilot?

(Name withheld)

FCC advises that it is not their intent to issue violation citations for this reason. To quote from their letter: "Transmission of the complete aircraft call sign is not considered to require the letter 'N'."

The information currently published in Part I of AIM is correct. If you have factual information concerning any "current FCC campaign to hear that 'November' on the first call up" FAA would appreciate seeing it so that we may resolve the matter.

• Changes on the Charts

I subscribe to both the U.S. and Canadian approach charts, and find the Canadian changes a useful tool. On each chart they show just what change created the need for a revised chart. This is very helpful as a reference and saves time trying to figure out what has been changed on the revised U.S. charts.

O. E. Nemitz
Pittsburgh, Pa.

This suggestion has been considered previously by agency and inter-agency cartographic committees. They feel that in the interest of safety each chart should be treated as a completely new procedure. Also, to give complete details on how current procedures differ from previous ones would require excessive wordiness.

• TSOs for G.A.?

I would like to know what quality, performance and environmental tests must be met by general aviation avionics equipment such as nav/coms, ADF, transponders, DME, and marker beacon receivers. How can I obtain copies of the applicable documents, which I believe are called TSOs?

Marvin Shapiro
Warminster, Pa.

At the present time Technical Standard Orders (TSOs) are optional for general aviation avionics equipment, although a proposal under consideration would set up such standards for transponders. (Ed. Note: See page 14 for late news)

The TSOs are contained in Part 37, Volume 2 of the Federal Aviation Regulations. Volume 2 may be ordered from Superintendent of Documents, GPO, Washington, D.C. for $8.00. Catalog number is TD 4.6/3:v 2.

• From the Ground Up

I am a high school student and was thinking of building a full-scale airplane to fly myself. Could you tell me if I would need a license and registration to operate it? I would take off and land in a field nearby.

(Name withheld)

There are Federal regulations that must be followed in constructing a homebuilt airplane, including regular inspections while it is under construction. Your nearest FAA General Aviation District Office would be able to fill you in on details. Incidentally, the subject is covered rather thoroughly in the November issue of FAA AVIATION NEWS (See "Airplane in the Attic"). The Experimental Aircraft Association (headquarters at 11311 West Forest Home Ave., Franklin, Wis. 53132) with thousands of members whose main interest is building their own aircraft, could also give you much useful information.

Before you can use a field for landing and taking off you must meet any existing local and state requirements; contact your local government for this information. You must also conform to FAA regulations, and your nearest FAA Airports District Office (Terminal Building, Capital City Airport, New Cumberland, Penn. 17070) will be able to help you in this part of your planning.

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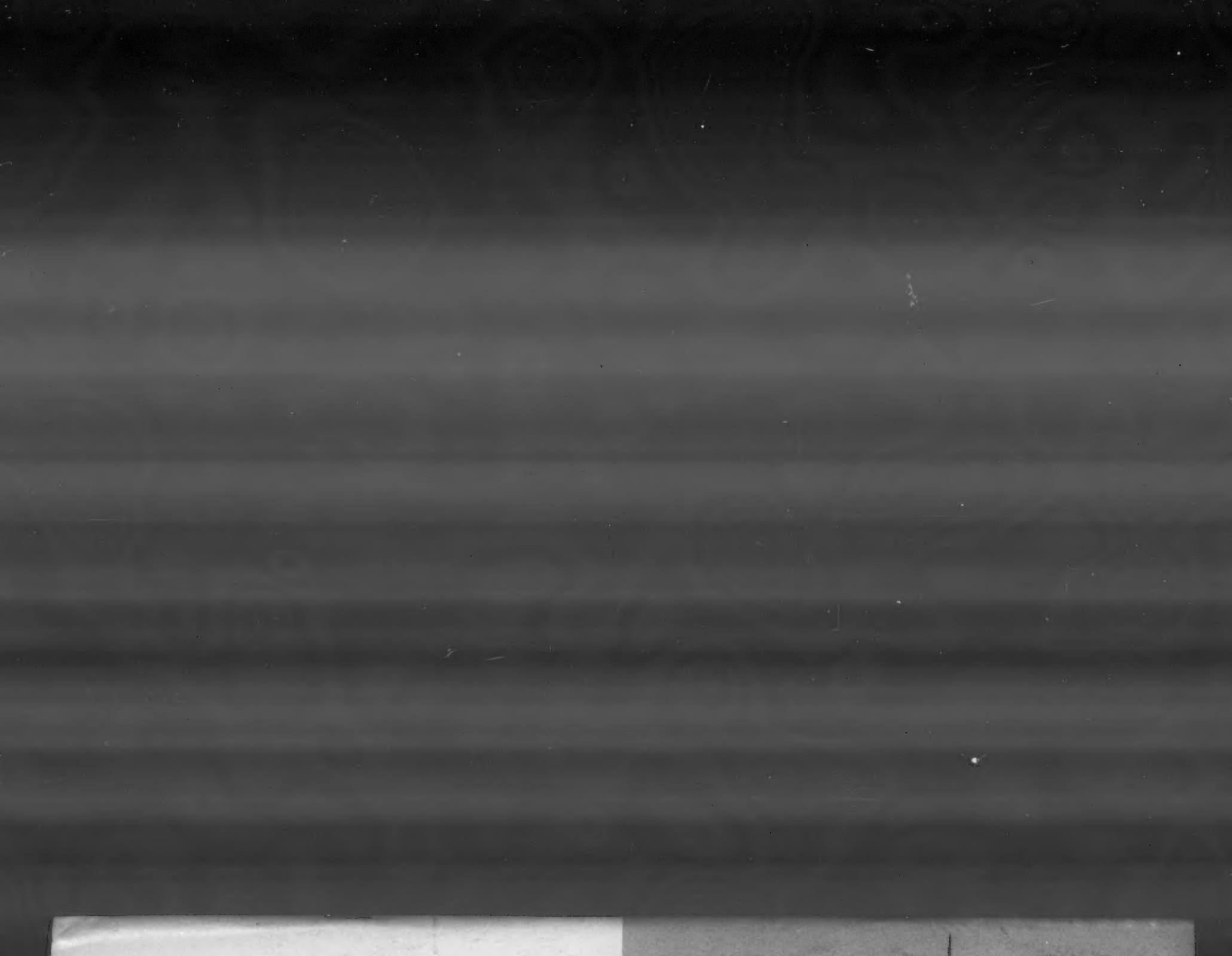
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